Computer Technology

K-12

Computer Technology: Literacy and Usage K-12

Computer Technology: Programming 9-12

Computer Technology: Research and Development 9-12

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Acknowledgments

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Rationale

Students in the 21st Century must be prepared for technological advancements in life. A computer skills curriculum prepares students in the use of computers to access and apply data necessary to solve problems in a technology-based society.

Our rationale for incorporating computer literacy into the Tennessee curriculum is to extend this use within the K-12 framework of subjects. Achieving proficiency with the computer, like learning in any other discipline, is based upon a continuum of knowledge and skill development. The computer proficiency continuum begins with an awareness of what a computer is, passes through a level of literacy, and culminates in mastery in which advanced applications and sophisticated programming techniques are understood and practiced.

At the awareness level the learner is introduced to the computer and its many functions. Concepts dealing with what a computer is, how its "brain" works, and how it affects our daily lives, are explored. The learner also becomes acquainted with the specialized terminology of computers and computing.

At the literacy level the student gains a working knowledge of computer functions by learning how to perform simple programming operations and how to use application software. Inferences can be made about the impact of computers on the individual and on society and when the use of computer applications is appropriate. At this level, career opportunities explored and various positions in computer operations are identified.

At the mastery level the student learns the complexities of computer operations. Advanced knowledge of at least one programming language is acquired. The multi-faceted sociological impact of computers (both positive and negative) is also understood.

The Computer Technology: Literacy and Usage K-12 standards is intended to allow the local system to develop curriculum that will lead the novice learner from the awareness level through the literacy level. Yet, it is planned in a manner that will allow the more advanced student to benefit from its content as well. School systems may choose to integrate the Computer Technology: Literary and Usage K-12 standards into other subject areas. The 9-12 section may be taken as part of a course sequence. This section is adapted from National Education Technology Standards (NETS*) for Students.

A technologically literate student:

- exhibits ethical and responsible behavior when using technology:
- acquires knowledge in the use of technological resources, processes, and applications (software);
- accesses, organizes, analyzes, synthesizes, and presents information;
- enhances the effectiveness of a broad range of communication skills;

- develops problem solving strategies to accomplish tasks while expressing individual creativity;
- and becomes aware of career opportunities relating to computer technology.

The Computer Technology 9-12 programming standards are intended to allow the local system to develop curriculum that concentrates on the mastery of at least one computer language and/or sophisticated interactive programming and authoring language.